Promising Finding for Malaria Vaccine

By Lila Abassi — May 11, 2016

We here in the United States have been spared the scourge of malaria, as it is a disease mainly endemic in the tropics. According to the World Health Organization, there were 198 million cases of malaria in 2013. Meanwhile, there are 3.4 billion people who are exposed to malaria and 1.2 billion considered at high risk.

Most often, children are disproportionately affected and they account for a majority of the mortality cases. In 2010, of the 1.24 million malaria deaths 714,000 occurred in children less than five years of age.

Malaria is a parasitic disease that is transmitted by the bite of an infected *Anopheles* mosquito. The clinical manifestations are primarily fever and the rest are non-specific, such as an elevated heart rate, increased breathing rate, chills, malaise, fatigue, sweating, headache, cough, decreased appetite, nausea/vomiting, abdominal pain, diarrhea, muscle aches and pains.

Those are considered “uncomplicated findings.” A more complicated disease course can involve seizures, respiratory failure, severe drop in blood pressure, kidney/liver failure, severe anemia, and potentially bleeding to death.

Most treatment for this terrible disease has focused on symptomatic treatment, and the anti-malarial pharmaceutical armamentarium is not devoid of its own significant side effects. Therefore, it makes the revelation of a new vaccine developed by the University of Maryland very welcome. The study [1] was published in the Journal *Nature Medicine*. This vaccine, though in Phase I clinical trial, was found to confer protection in vaccinated individuals for up to a year in more than half of the trial participants.

“These results are really important,” according to Kirsten E. Lyke [2], one of the researchers in the study. “Malaria has such a devastating effect on children, especially in Africa. This vaccine has the potential to help travelers, military personnel and children in malaria-endemic areas.”

The vaccine known as PfSPZ is the first one that has shown this level of protection. The previous vaccine attempt yielded only a 22 percent protection in its subjects. In this trial, of the 101 subjects, 55 percent maintained this protection with four doses up to 59 weeks where the antibody
levels dropped considerably. The authors state that the vaccine must be given intravenously to achieve this protection.

Should the vaccine be improved upon and it moves through the clinical trial process, it has the potential to significantly shift the morbidity and mortality associated with malarial infections and save hundreds of thousands of lives.

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